

Academy Panel Blasts U.S. Export Controls

It says restrictions are too extensive and cumbersome, American companies are losing business, and DOD's role is too powerful

IN a report that was disavowed by the Department of Defense before it was even written, a joint committee of the National Academy of Sciences and the National Academy of Engineering has issued a scathing critique of the Reagan Administration's efforts to control exports of militarily sensitive technology. The Administration "has tended to focus on tightening controls while giving little attention to their effectiveness and costs," the committee writes.

As a result, American companies are unfairly handicapped in international markets and some policies "are having an increasingly corrosive effect on relationships with many NATO countries." Moreover, although the Administration's export control policies are aimed at stemming leakage of critical technology to the Soviet bloc, they are also reducing the flow of high technology between the United States and its allies, the committee argues.

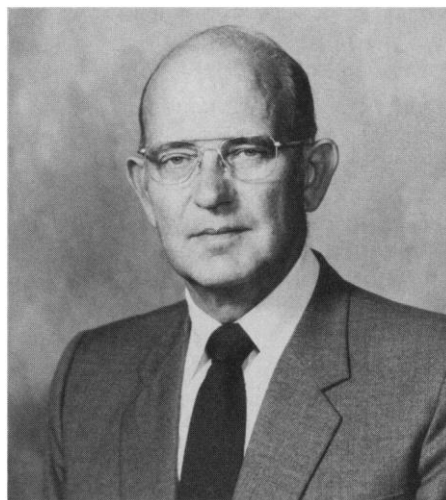
The committee, which was chaired by Lew Allen, director of the Jet Propulsion Laboratory and a former Air Force chief of staff, acknowledges that export controls are needed to counter the Soviet Union's "massive, well-financed, and frequently effective" efforts to obtain militarily sensitive technology. "We are not saying that a greater flow of high technology [to the Soviets] is appropriate," Allen emphasizes. However, the committee believes current policies may be counterproductive by dragging down U.S. competitiveness.

The report is sure to play a prominent role in the bureaucratic trench warfare that has split the Reagan Administration in the past few years. In particular, it should provide ammunition for the departments of Commerce and State, which have steadily been losing ground to DOD—or, more accurately, to the office of assistant secretary of defense Richard Perle—in export control matters.

The study, in fact, got caught in the cross fire early on. Unlike most Academy studies, which are requested by a particular agency, this one was initiated by the Academy itself. In 1984, the Academy sought sponsors to help pay the estimated

\$900,000 cost of the effort and received commitments from the departments of State, Commerce, and Energy; the National Science Foundation; and a variety of private organizations and foundations. In addition, DOD, in the person of under secretary for research and engineering Richard DeLauer, agreed to kick in \$200,000.

DeLauer's office had long been involved in a struggle with Perle and his assistant, Stephen Bryen, over DOD's export control policy, and DeLauer presumably saw the Academy study as a potential counter to Perle's efforts to tighten the screws on technology exports. Perle and Bryen evidently saw it that way too. When DeLauer left



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DOD to return to private industry in 1985, responsibility for the Academy contract was transferred to Bryen's office. Then, in February last year, Bryen told his staff not to cooperate with the study and DOD subsequently failed to provide the second half of the promised \$200,000.

According to Academy officials, DOD's noncooperation did not affect the committee's data gathering. Briefings had already been received from Bryen's staff before the gag order was imposed. But the funding cutoff was painful; the Academy had to

make up the shortfall from its own coffers.

In essence, the committee argues that the only effective way to deny sensitive technology to the Soviet bloc is to strengthen international control mechanisms and concentrate on the most critical technologies. "The goal of U.S. policy," says the report, "should be to so improve the multilateral control system that it is possible to remove controls from West-West trade." Currently, 90% of licence applications in the United States are for exports to friendly countries.

In fact, largely thanks to U.S. pressure, the chief mechanism for coordinating the West's policies, the Coordinating Committee for Multilateral Export Controls (CoCom), has been beefed up in recent years. The committee, which consists of NATO countries plus France and Japan, maintains a list of critical technologies and attempts to ensure that member nations adopt consistent export control policies. Since the Reagan Administration came to office, CoCom has received unprecedented attention. The list of sensitive technologies has been reviewed, national enforcement procedures have been tightened, and the organization's staff and resources have been significantly upgraded.

The Academy applauds these developments, but says the CoCom process is still flawed. Current efforts are spread too thinly, with far too many technologies subject to controls, and more effort should be made to bring in countries that are not now part of the West's control system but which are potential sources of sensitive technology, the report says. In addition, the committee argues that continuing tensions among member countries undermine CoCom's effectiveness.

One particular source of tension is a practice by which the United States attempts, in effect, to impose its own regulations on foreign companies. Companies that import restricted technologies from the United States are required to apply for an export license from the U.S. government if they subsequently export the technology to another country. Thus, a firm that imports a U.S. computer chip is supposed to apply for a license from the United States before exporting any goods that contain the chip. Not surprisingly, many U.S. allies resent this intrusion into their domestic affairs.

The committee levels most of its criticism at U.S. domestic policies, however. The United States, alone among the Western allies, does not confine its export controls to technologies on the CoCom list. It attempts to control a broader range of technologies—40% of all exports of U.S. manufactured goods require a license, the committee estimates. This, in itself, can put U.S. firms at a disadvantage in competing for foreign busi-

ness, and makes little sense if the technologies are available elsewhere, the committee notes.

Compounding the problem is the fact that delays in obtaining approval can be inordinate. The Commerce Department says it takes, on average, 25 days to process a license; a survey of companies conducted by the committee found a 6-week average processing time. Moreover, about 5% of applications take longer than 100 days to be processed, the committee reports. In contrast, Japan's Ministry of International Trade and Industry "usually responds within 2 or 3 days to applications for exports to Free World destinations."

These impediments have already had a negative impact on U.S. companies' competitiveness, the committee said. In a survey conducted for the committee, 52% of 170 respondents said they had lost sales primarily as a consequence of export controls, and 38% said existing customers have expressed a preference to shift to non-U.S. suppliers to avoid getting entangled with U.S. controls.

The committee in effect argues that the Reagan Administration has veered too sharply toward national security goals in setting export control policies and has not paid enough attention to their economic impact. "The government has not effectively listened to business," says Allen.

This is partly a consequence of the fact that DOD has become the dominant player within the Administration on export control matters. Early on, largely because of Perle's concerns about technology leakage to the Soviets, DOD pressed for stricter controls and greatly increased the resources it devotes to controlling technology exports. In fact, DOD has acquired "de facto veto authority" over some aspects of export licensing, the Academy committee contends, and it dominates U.S. input into CoCom.

To help bring other considerations into export control policy, the committee calls for increasing the resources and influence of the Commerce and State departments, and says the National Security Council should balance competing interests. The committee also notes that within DOD, responsibility for export controls has shifted from the office responsible for research and engineering to the office responsible for policy, where a new bureaucracy, the Defense Technology Security Administration, has been established under Bryen's purview. "It should now be the goal . . . to reestablish a major role for the technical side of DOD and to reduce the DOD role in detailed license review," says the committee.

Perle and Bryen were evidently right to be concerned about the threat to their turf. ■

COLIN NORMAN

Shuttle Plan Faulted

Design changes being made today will determine how the space shuttle performs in February 1988, when it is supposed to blast off again after a 2-year operational shutdown. The overhaul should make the shuttle safer and more reliable. But critical reviews issued on 13 and 15 January by the National Research Council (contracting arm of the National Academies of Science and Engineering) suggest that major obstacles may block the road to the launch pad. It may be unrealistic to expect the shuttle to fly in a year.

The National Aeronautics and Space Administration (NASA), which pays for this criticism, has given no formal response. A spokesman says NASA "will carefully consider all of the recommendations," adding that "nothing has come up that would keep us from meeting the February 1988 launch date."

Overhauling a system as complex as the shuttle can introduce many unexpected risks. One hazard, the NRC reviewers point out, is that redesigners will assume they understand the original system when they do not. They may make "improvements" as troublesome as the flaws they remove.

For this reason, the NRC reviewers urge NASA to move slowly, methodically, and with more attention to test data. A number of recommendations deal with design and testing fundamentals.

A major concern is that NASA appears to be moving on a "success-oriented" path that "leaves little room in the schedule for modifying the design." This may set a bias against identifying new problems, making it hard to anticipate trouble. This comment comes from an 11-member committee looking into problems in the solid rockets, chaired by former National Science Foundation chief H. Guyford Stever.

The Stever report, the third in a series that will continue through the shuttle's first launch, stresses the need for contingency planning. It urges NASA to develop alternative technologies in several key areas, so that if a planned design change does not work, NASA will have a second option to fall back on. Connected to this is another fundamental recommendation: that NASA make testing procedures more coherent. The reviewers say that some tests appear so ill conceived that they may not clearly signal a failure when one occurs. The effect may be to let intuition and inertia drive the program.

As an example, the Stever committee focuses on the rocket nozzle and its attachments. This is one of three items cited as not covered by adequate contingency planning. The others are the redesign of the joint between rocket casings (called the "case field joint") and the configuration of insulation around all the joints, including the infamous O-rings. The nozzle had problems before; now they are likely to become more complex.

According to Myron Uman, staff director for the Stever Committee, new problems may be introduced because NASA wants to strengthen the joint at the nozzle by installing 100 radial bolts. There are already scores of axial bolts in place. Stress patterns and leakage risks will be made more complex by doubling the number of bolts, adding bolts in a new orientation, putting in extra holes, and installing small O-rings in each bolt hole. It would be simpler to cast a metal forging for the nozzle. But that would take more time and perhaps more money. NASA thinks it can make the existing nozzle work. The Stever panel finds the lack of an alternative design "serious, since the joint is critical for safety, few tests of the final configuration are planned, and they occur late in the test program."

The group also examines the O-rings in detail. After making a fundamental error in selecting materials for a new O-ring design, NASA decided to stick with old materials. A heating system will be added to keep the O-rings soft in cold weather. But the Stever group notes that this will introduce the new risk of having too much heat.

In the same week that this report came out, another committee headed by Alton Slay issued comments on NASA's risk analysis techniques. Although low-keyed, it also stresses fundamentals. In particular, it urges NASA to use numerical analysis to separate big risks from little ones. In setting priorities, the panel notes, NASA does not "consider the probability of occurrence of an event," but relies too much on the "judgment of experienced practitioners." ■ **ELIOT MARSHALL**